

FORM PTO-1449

INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.
0942.4190002APPLICATION NO.
09/390,634APPLICANT
PRICE *et al.*FILING DATE
September 7, 1999GROUP
1651/633

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
gk	AA1	4,673,649	06/16/1987	Boyce <i>et al.</i>	435	240	07/15/1983
	AB1	4,767,704	08/30/1988	Cleveland <i>et al.</i>	435	68	10/07/1983
	AC1	4,927,762	05/22/1990	Darfler, F.J.	435	240.31	11/30/1988
	AD1	4,940,666	07/10/1990	Boyce <i>et al.</i>	435	240.2	12/09/1986
	AE1	5,024,947	06/18/1991	Inlow <i>et al.</i>	435	240.31	07/24/1987
	AF1	5,045,454	09/03/1991	Bertheussen, K.	435	29	02/23/1990
	AG1	5,063,157	11/05/1991	Stockinger, H.	435	240.2	01/11/1989
	AH1	5,122,469	06/16/1992	Mather <i>et al.</i>	435	240.2	10/03/1990
	AI1	5,187,077	02/16/1993	Gearing <i>et al.</i>	435	69.1	12/09/1988
	AJ1	5,316,938	05/31/1994	Keen <i>et al.</i>	435	240.31	12/18/1992
	AK1	5,322,775	06/21/1994	Clark <i>et al.</i>	435	69.1	11/22/1991

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
gk	AL1	WO 92/05246	04/01/1992	WIPO			Yes No
	AM1	WO 95/06716	03/09/1995	WIPO			Yes No
	AN1	WO 95/28412	10/26/1995	WIPO			Yes No
	AO1	WO 96/19245	06/27/1996	WIPO			Yes No
	AP1	WO 96/22362	07/25/1996	WIPO			Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

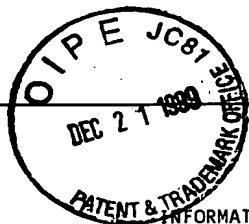
gk	AR	1	Abbondanzo, S.J. <i>et al.</i> , "Derivation of Embryonic Stem Cell Lines," <i>Meth. Enzym.</i> 225:803-822 (1993).
	AS	1	Baringa, M., "Knockout Mice: Round Two," <i>Science</i> 265:26-28 (1994).
	AT	1	Brûlet, P. <i>et al.</i> , "Monoclonal antibodies against trophectoderm-specific markers during mouse blastocyst formation," <i>Proc. Natl. Acad. Sci. USA</i> 77:4113-4117 (1980).

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Joe Wautsch



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<i>sk</i>	AA2	5,332,672	07/26/1994	Conover, J. <i>et al.</i>	435	240.2	04/09/1992
	AB2	5,342,777	08/30/1994	Cole <i>et al.</i>	435	240.31	03/03/1992
	AC2	5,405,772	04/11/1995	Ponting	435	240.31	06/18/1993
	AD2	5,453,357	09/226/1995	Hogan, B.	435	7.21	10/08/1992
	AE2	5,474,931	12/12/1995	DiSorbo <i>et al.</i>	435	240.31	09/21/1993
	AF2	5,573,937	11/12/1996	Shinmoto <i>et al.</i>	435	240.1	01/09/1995
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
<i>sk</i>	AL2	WO 96/22364	07/25/1996	WIPO			Yes No
	AM2	WO 96/39487	12/12/1996	WIPO			Yes No
	AN2	WO 97/33978	09/18/1997	WIPO			Yes No
	AO2	WO 97/34999	09/25/1997	WIPO			Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

<i>sk</i>	AR	2	Camper, S.A. <i>et al.</i> , "Implementing Transgenic and Embryonic Stem Cell Technology to Study Gene Expression, Cell-Cell Interactions and Gene Function," <i>Biology of Reproduction</i> 52:246-257 (1995).
	AS	2	Capecchi, M.R., "Altering the Genome by Homologous Recombination," <i>Science</i> 244:1288-1292 (1989).
	AT	2	Conover, J.C. <i>et al.</i> , "Ciliary neurotrophic factor maintains the pluripotentiality of embryonic stem cells," <i>Devel.</i> 119:559-565 (1993).

EXAMINER *James M. Kerr*

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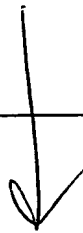

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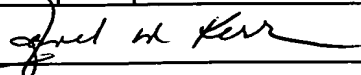
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>3</u>	Dinsmore, J. <i>et al.</i> , "Embryonic Stem Cells Differentiated <i>In Vitro</i> as a Novel Source of Cells for Transplantation," <i>Cell Transpl.</i> 5:131-143 (March/April 1996).
	AS	<u>3</u>	Doetschman, T. <i>et al.</i> , "The <i>in vitro</i> development of blastocyst-derived embryonic stem cell lines: formation of visceral yolk sac, blood islands and myocardium, <i>J. Embryol. Exp. Morph.</i> 87:27-45 (1985).
	AT	<u>3</u>	Doetschman, T. <i>et al.</i> , "Establishment of Hamster Blastocyst-Derived Embryonic Stem (ES) Cells," <i>Dev. Biol.</i> 127:224-227 (1988).

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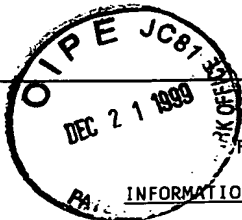


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	FILING DATE September 7, 1999	GROUP 1651 1633




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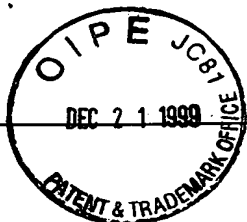
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>4</u>	Doetschman, T. <i>et al.</i> , "Embryonic Stem Cell Model Systems for Vascular Morphogenesis and Cardiac Disorders," <i>Hypertension</i> 22:618-629 (1993).
	AS	<u>4</u>	Du, F. <i>et al.</i> , "Nuclear transfer of putative rabbit embryonic stem cells leads to normal blastocyst development," <i>J. Reprod. Fertil.</i> 104:219-223 (1995).
	AT	<u>4</u>	Evans, M.J. and Kaufman, M.H., "Establishment in culture of pluripotential cells from mouse embryos," <i>Nature</i> 292:154-156 (1981).

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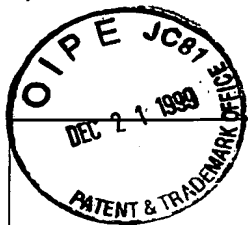
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	<u>5</u>	Freshney, R.I., "Culture of Animal Cells," <i>A Manual of Basic Technique</i> , Alan R. Liss, Inc., publ., New York, pp.80-81 (1987).
	AS	<u>5</u>	Fry, R.C., "The Effect of Leukemia Inhibitory Factor (LIF) on Embryogenesis," <i>Reprod. Fertil. Dev.</i> 4:449-458 (1992).
	AT	<u>5</u>	Fuller, S.J. and Chien, K.R., "Genetic Engineering of Cardiac Muscle Cells: <i>In Vitro</i> and <i>In Vivo</i> ," in: <i>Genetic Engineering: Principles and Methods</i> , Vol. 16, Setlo, J.K., ed., Plenum Press, New York, pp. 17-31 (1994).

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	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

<i>sk</i>	AR	<u>6</u>	<i>gw</i> GIBCO BRL Catalog, pp. 123-142, 145, 148, 153 (1992).
	AS	<u>6</u>	Gossler, A. <i>et al.</i> , "Transgenesis by means of blastocyst-derived embryonic stem cell lines," <i>Proc. Natl. Acad. Sci. U.S.A.</i> 83:9065-9069 (1986).
	AT	<u>6</u>	Graves, K.H. and Moreadith, R.W., "Derivation and Characterization of Putative Pluripotent Embryonic Stem Cells From Pre-Implantation Rabbit Embryos," <i>Molec. Reprod. Dev.</i> 36:424-433 (1993).

EXAMINER

Paul M. Kerr

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Joe Wotack

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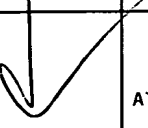
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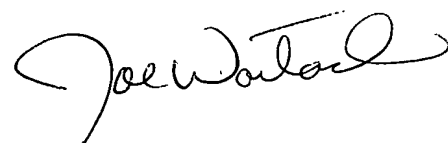
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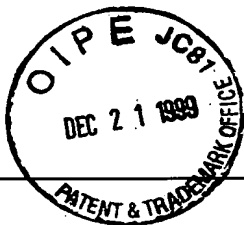
	AR	<u>I</u>	Gu, H. <i>et al.</i> , "Deletion of a DNA Polymerase β Gene Segment in T Cells Using Cell Type-Specific Gene Targeting," <i>Science</i> 265:103-106 (1994).
	AS	<u>I</u>	Ham, R.G., "Clonal Growth of Mammalian Cells in a Chemically Defined, Synthetic Medium," <i>Proc. Natl. Acad. Sci.</i> , 53:288-293 (February 1965).
	AT	<u>I</u>	Ham, R.G., "Formulation of Basal Nutrient Media," <i>Methods for Preparation of Media, Supplements, and Substrata for Serum-Free Animal Cell Culture</i> , Alan R. Liss, Inc., publ., New York, pp. 3-21 (1984).

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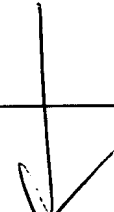

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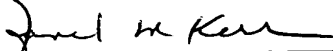
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	AN						Yes No
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	8	Hata, R.-I. and Senoo, H., "L-Ascorbic Acid 2-Phosphate Stimulates Collagen Accumulation, Cell Proliferation, and Formation of a Three-Dimensional Tissue-like Substance by Skin Fibroblasts," <i>J. Cell. Phys.</i> 138:8-16 (1989).
	AS	8	"Isolation, Culture, and Manipulation of ES Cells," in <i>Manipulating the Mouse Embryo. A Laboratory Manual</i> , 2 nd Ed., Hogan, B. <i>et al.</i> , eds., Cold Spring Harbor Laboratory Press, pp. 255-258 (1994).
	AT	8	Hollands, P., "Embryonic stem cell grafting: the therapy of the future?," <i>Human Reproduction</i> 6:79-84 (1991).

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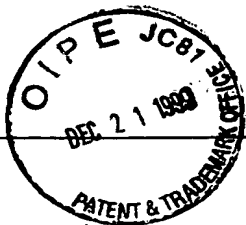


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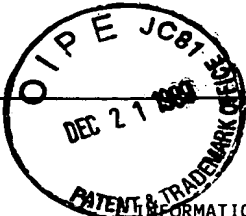
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	AR	2	Hooper, M. <i>et al.</i> , "HPRT-deficient (Lesh-Nyhan) mouse embryos derived from germ line colonization by cultured cells," <i>Nature</i> 326:292-295 (1987).
	AS	2	Iannaccone, P.M. <i>et al.</i> , "Pluripotent Embryonic Stem Cells from the Rat Are Capable of Producing Chimeras," <i>Dev. Biol.</i> 163:228-292 (1994).
	AT	2	Keller, G. <i>et al.</i> , "Hematopoietic Commitment during Embryonic Stem Cell Differentiation in Culture," <i>Mol. Cell. Biol.</i> 13:473-486 (1993).

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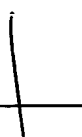
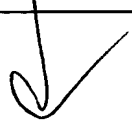
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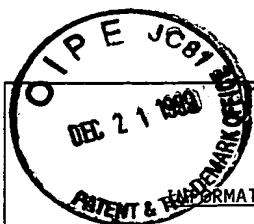
	AR	<u>10</u>	Johansson, B.M. and Wiles, M.V., "Evidence for Involvement of Activin A and Bone Morphogenetic Protein 4 in Mammalian Mesoderm and Hematopoietic Development," <i>Molec. Cell. Biol.</i> 15:141-151 (1995).
	AS	<u>10</u>	Keller, G.M., "In vitro differentiation of embryonic stem cells," <i>Curr. Opin. Cell Biol.</i> 7:862-869 (1995).
	AT	<u>10</u>	Lamb, B.T. <i>et al.</i> "Introduction and expression of the 400 kilobase precursor amyloid protein gene in transgenic mice," <i>Nature Genetics</i> 5:22-29 (1993).

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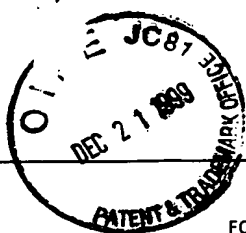
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	AR	<u>11</u>	Lambert, K.J. and Birch, J.R., "Cell Growth Media," in: <i>Animal Cell Biotechnology Vol. 1</i> , Spier, R.E. and Griffiths, J.B., eds., Academic Press, pp. 85-123 (1985).
	AS	<u>11</u>	Loo, D.T. <i>et al.</i> , "Extended Culture of Mouse Embryo Cells Without Senescence: Inhibition by Serum," <i>Science</i> 236:200-202 (1987).
	AT	<u>11</u>	Maciag, T. <i>et al.</i> , "An Endocrine Approach to the Control of Epidermal Growth: Serum-Free Cultivation of Human Keratinocytes," <i>Science</i> 211:1452-1454 (1981).

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U.S. PATENT DOCUMENTS

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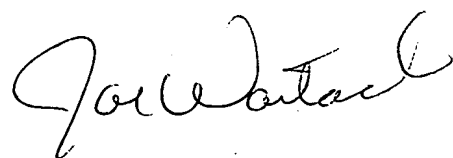
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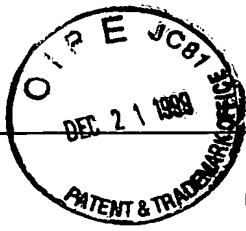
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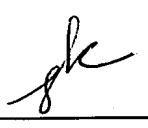
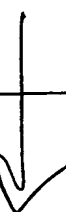

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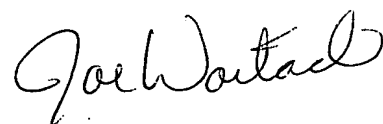
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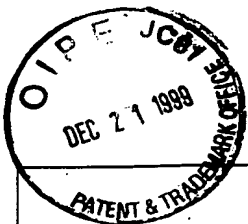
	AR	<u>13</u>	Merlino, G.T., "Transgenic animals in biomedical research," <i>FASEB J.</i> 5:2996-3001 (1991).
	AS	<u>13</u>	Nagy, A. <i>et al.</i> , "Derivation of completely cell culture-derived mice from early-passage embryonic stem cells," <i>Proc. Natl. Acad. Sci. USA</i> 90:8424-8428 (1993).
	AT	<u>13</u>	Nakano, T. <i>et al.</i> , "Generation of Lymphohematopoietic Cells from Embryonic Stem Cells in Culture," <i>Science</i> 265:1098-1101 (1994).

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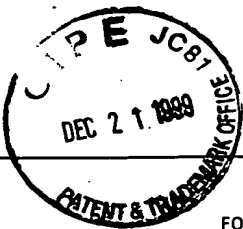
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<i>gk</i>	AR	<u>14</u>	Palacios, R. <i>et al.</i> , "In vitro generation of hematopoietic stem cells from an embryonic stem cell line," <i>Proc. Natl. Acad. Sci. USA</i> 92:7530-7534 (1995).
	AS	<u>14</u>	PCT Gazette, International Bureau of the World Intellectual Property Organization Under the Patent Cooperation Treaty, publ., p. 275 (January 1998).
	AT	<u>14</u>	Pease, S. <i>et al.</i> , "Isolation of Embryonic Stem (ES) Cells in Media Supplemented with Recombinant Leukemia Inhibitory Factor (LIF)," <i>Devel. Biol.</i> 141:344-352 (1990).

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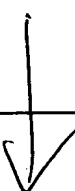

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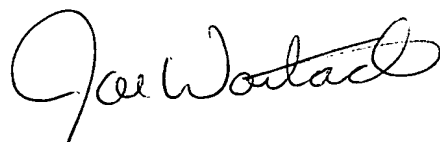
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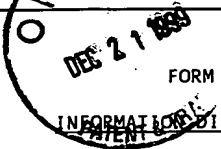
	AR	<u>15</u> 1	Pederson, R.A., "Studies of <i>in vitro</i> Differentiation with Embryonic Stem Cells," <i>Reprod. Fertil. Dev.</i> 6:543-552 (1994).
	AS	<u>15</u>	Petters, R.M., "Transgenic Livestock as Genetic Models of Human Disease," <i>Reprod. Fertil. Dev.</i> 6:643-645 (1994).
	AT	<u>15</u>	Ray, W.J. and Gottlieb, D.I. "Regulation of Protein Abundance in Pluripotent Cells Undergoing Commitment to the Neural Lineage," <i>J. Cell. Physiol.</i> 168:264-275 (August 1996).

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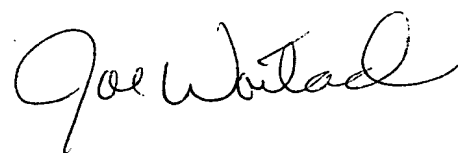
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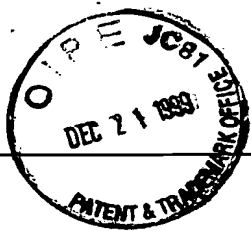
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	AR	16	Robertson, E.J. <i>et al.</i> "X-chromosome instability in pluripotent stem cell lines derived from parthenogenetic embryos," <i>J. Embryol. Exp. Morph.</i> 74:297-309 (1983).
	AS	16	Robertson, E. <i>et al.</i> , "Germ-line transmission of genes introduced into cultured pluripotent cells by retroviral vector," <i>Nature</i> 323:445-448 (1986).
	AT	16	Rose, T.M. <i>et al.</i> , "Oncostatin M (OSM) Inhibits the Differentiation of Pluripotent Embryonic Stem Cells <i>In Vitro</i> ," <i>Cytokine</i> 6:48-45 (1994).

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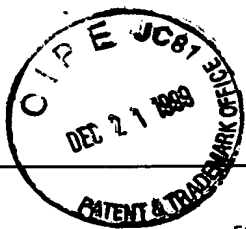
gk	AR	17	Sigma Catalog, pp. 1510-1515, 1518-1529 (1994).
↓	AS	17	Shastry, B.S., "Genetic knockouts in mice: an update," <i>Experientia</i> 51:1028-1039 (1995).
↓	AT	17	Shuman, R.M., "Production of transgenic birds," <i>Experientia</i> 47:897-905 (1991).

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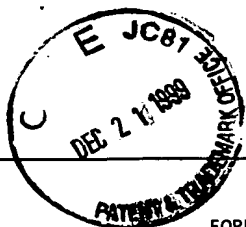
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	AR	<u>18</u>	Smith, A.G. <i>et al.</i> , "Inhibition of pluripotential embryonic stem cell differentiation by purified polypeptides," <i>Nature</i> 336:688-670 (1988).
	AS	<u>18</u>	Smithies, O. and Maeda, N., "Gene targeting approaches to complex genetic diseases: Atherosclerosis and essential hypertension," <i>Proc. Natl. Acad. Sci. USA</i> 92:5266-5272 (1995).
	AT	<u>18</u>	Smithies, O., "Animal models of human genetic diseases," <i>Trends in Genetics</i> 9:112-116 (1993).

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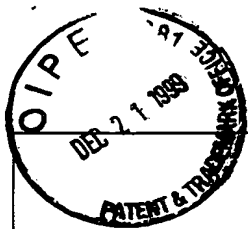
	AR	19	Snodgrass, H.R. <i>et al.</i> , "Embryonic Stem Cells and <i>In Vitro</i> Hematopoiesis," <i>J. Cell. Biochem.</i> 49:225-230 (1992).
	AS	19	Suda, Y. <i>et al.</i> , "Mouse Embryonic Stem Cells Exhibit Indefinite Proliferative Potential," <i>J. Cell. Phys.</i> 133:197-201 (1987).
	AT	19	Thompson, S. <i>et al.</i> , "Germ Line Transmission and Expression of a Corrected HPRT Gene Produced by Gene Targeting in Embryonic Stem Cells," <i>Cell</i> 56:313-321 (1989).

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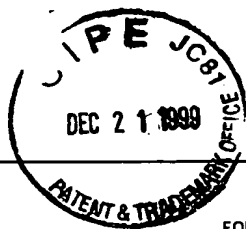
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↓	AS	20	Wakamatsu, Y. <i>et al.</i> , "Establishment of a pluripotent cell line derived from a medaka (<i>Oryzias latipes</i>) blastula embryo," <i>Mol. Marine Biol. Biotech.</i> 3:185-191 (1994).
↓	AT	20	Wille, J.J. <i>et al.</i> , "Integrated Control of Growth and Differentiation of Normal Human Prokeratinocytes Cultured in Serum-Free Medium: Clonal Analysis, Growth Kinetics, and Cell Cycle Studies," <i>J. Cell. Physiol.</i> 121:31-44 (1984).

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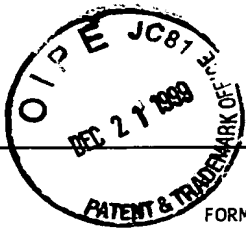
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↓	AS	21	Yagi, T. <i>et al.</i> , "A Novel ES Cell Line, TT2, With High Germline-Differentiating Potency," <i>Anal. Biochem.</i> 214:70-76 (1993).
↓	AT	21	Yanai, J. <i>et al.</i> , "Embryonic Cultures But Not Embryos Transplanted To The Mouse's Brain Grow Rapidly Without Immunosuppression," <i>Intern. J. Neuroscience</i> 81:21-26 (1995).

EXAMINER *Paul H. Kerr*

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Joe W. Toland



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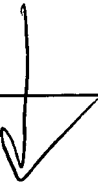

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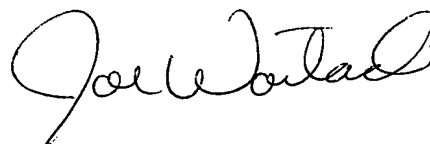
	AR	<u>22</u>	Zang, M., <i>et al.</i> "Production of Recombinant Proteins in Chinese Hamster Ovary Cells Using A Protein-Free Cell Culture Medium," <i>Biotechnology</i> 13:389-392 (1995).
	AS	<u>22</u>	Cost estimate, facsimile transmission from Dr. Mary Stevens to Dr. Mindy Goldsborough, 2 pages, dated more than one year prior to January 10, 1997.
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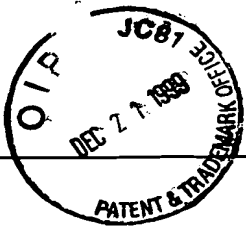
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↓	AS	23	Letter from Dr. Mindy Goldsborough to Dr. Mary Stevens, one page, dated less than 1 year prior to January 10, 1997.
↓	AT	23	Copy of letter from Dr. Mindy Goldsborough to Dr. Mary Stevens, signed by Dr. Mary Stevens, 1 page, dated less than one year prior to January 10, 1997.

EXAMINER

David M. Kern

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Joe Woulard

